



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,974	06/23/2003	Nicholas Mark Alford	348-035	1360
1009	7590	10/20/2005		
KING & SCHICKLI, PLLC 247 NORTH BROADWAY LEXINGTON, KY 40507			EXAMINER RODRIGUEZ, JOSEPH C	
			ART UNIT	PAPER NUMBER

3653

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/601,974	Applicant(s) ALFORD ET AL.	
	Examiner Joseph C. Rodriguez	Art Unit 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6,9,12 and 15-32 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29,31 and 32 is/are allowed.
- 6) ☒ Claim(s) 2-6,9,12,15,16,18-22,24-28 and 30 is/are rejected.
- 7) ☒ Claim(s) 17 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Final Rejection

Applicant's arguments filed 9/26/05 have been fully considered but they are not persuasive for reasons detailed below.

The 35 U.S.C. 112 rejections are maintained or modified as follows:

These rejections have been withdrawn.

The prior art rejections are maintained or modified as follows:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6, 9, 12, 15, 18-22 and 24-28, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michael et al. ("Michael")(US 2,789,655) in view of Fukumaki (JP 2000317342 A) and Elliot (US 3,712,472).

Michael teaches a magnetic separator (Fig. 2-6) comprising a plurality of tube portions (wherein portion of 42 below baffle 41 can be regarded as a tube portion that is part of a larger tube—i.e., part of tube above 31); a magnetic shuttle (52) movable between a separator position (below 41) and a release position (above 41; col. 5, ln. 4-70) withdrawn from the tube portion, wherein the tubes are arranged in a circular array (col. 4, ln. 14-35). Here, it is implicit from the circular structure of the magnetic

separator and the similar sizes of the magnetic shuttles that the forces between the magnets (i.e., shuttles) are balanced. Further, as the magnets are not connected, the magnets are regarded as capable of "moving independently of each other".

Michael as set forth above thus teaches all that is claimed except for expressly teaching said magnets movable by differential pressure, wherein each tube has an inlet for receiving a fluid to create differential pressure and the magnets have seals for sealing against an inner face of the tubes. Michael, however, already teaches the magnetic shuttles movable by mechanical means and, moreover, Elliot (Fig. 2 with fluid inlets near 26, Fig. 13 with sealing members 472; col. 5, ln. 10-col. 6, ln. 54; col. 10, ln. 55-col. 11, ln. 32 teaching that sealing members 472 prevent contamination of tube assemblies) teaches that the use of differential pressure can be regarded as an art recognized equivalent to mechanical means for moving shuttle magnets in the magnetic separating arts. See MPEP 2144.06. Fukumaki also teaches the use of differential pressure to move magnets between a separating and release position (Fig. 1, 3, with fluid inlets 10 at front portion of magnetic tubes 11). Moreover, the use of differential pressure can be seen as a more efficient way of moving the magnets than either mechanical or human means (Fukumaki, English Abstract). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Michael as taught by above as differential pressure is an art recognized equivalent that moves said magnets in an easier fashion, fluid inlets are inherent when moving a device with differential pressure and sealing members prevent the contamination of the tube assembly.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Michael et al. ("Michael")(US 2,789,655) in view of Fukumaki (JP 2000317342 A) and Elliot (US 3,712,472) as applied to claims 2-6, 9, 12, 15, 18-22 and 24-28, 30 above, and further in view of Carr (us 4,457,838).

Michael, Elliot and Fukumaki as set forth above teach all that is claimed except for expressly teaching a control apparatus for supplying compressed air to the tube to move the shuttle between its positions. Elliot, however, already teaches the use of a control system (Fig. 2, control system 36, 38, 40; col. Col. 5, ln. 10-60) for supplying hydraulic fluid to move the tubes, wherein air can be regarded as a hydraulic fluid. Further, if air is not regarded as hydraulic fluid, the mere substitution of air for hydraulic fluid can be regarded as an art recognized equivalent in the means for creating differential pressure arts (see Elliot, col. 11, ln. 10-30 teaching that the magnet can be caused to move through the tube "hydraulically, pneumatically, electrically or mechanically"). See MPEP 2144.06. For instance, Carr teaches the use of compressed air to move a slidable magnetic assembly (col. 6, ln. 14-38). Moreover, Carr also teaches that the use of air reduces the need for electric motors for moving said magnets (col. 10, ln. 33-36). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Michael, Elliot and Fukumaki as taught above as a control system provides the common sense benefit of greater control over the fluid flow means and compressed air is a well known substitute for hydraulic fluid.

Response to Arguments

Applicant's arguments that the prior art combination is not properly combinable and is unsuitable for its intended purposes are unpersuasive upon a review of the prior art. In particular, Michael teaches a magnetic separation assembly that uses a magnetic shuttle (52, 56) that must be inserted and removed from a cylinder, wherein as "the magnets are slid out of the tubes 42, it will be appreciated that the dust collected on the tubes 42 are formed of non-magnetic material. In effect then, removal of the permanent magnets from the tubes 42 effects a deenergizing of the magnetic filter unit so that collected dust will fall to the bottom of the tank 31, after which the dust may be scooped out or otherwise removed from the tank." (col. 5, ln. 4-70). Michaels also teaches that dust removable is enabled by a vertical lift conveyor means or by strings attached to the magnetic shuttles (Id.), thus it is unclear how Applicant can argue that Michaels does not teach magnets movable by mechanical means. Michaels teaches the essence of Applicant's invention, but for the magnets movable by the use of differential pressure. Moreover, the prior art as cited above establishes that it is well known to move a magnetic shuttle by a variety of means, including differential pressure. These prior art devices offer the simple teaching that differential pressure can be used in moving the magnets instead of the means taught by Michaels—whatever means these might be. That is, if one interprets Michael's moving means as manual, the prior art offers the modification of automated movement by differential pressure—a clear benefit. Further, this modification is not inapposite to the invention disclosed by Michaels and would simply involve the extension of the tubular array along with the use

Art Unit: 3653

of fluid supply means, features that are present in the prior art. A review of the prior art of record indicates that this type of modification is well within the skill level of one with ordinary skill in the art as the concept of moving the magnets from a separation to a release position is a common undertaking that is accomplished by a variety of means. Further, Applicant's focus on a "downstream" position is also misplaced as the position below the baffle plates (39, 41) can be regarded as "downstream". Consequently, it is respectfully submitted that Applicant's claims are rendered obvious by the prior art.

Allowable Subject Matter

Claims 29, 31 and 32 are allowed.

Claims 17 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Examiner has maintained the prior art rejections, statutory rejections and drawing objections as previously stated and as modified above. Applicant's amendment necessitated any new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Joseph C Rodriguez** whose telephone number is **571-272-6942** (M-F, 9 am – 6 pm, EST).

The **Official** fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

The examiner's **UNOFFICIAL Personal fax number** is **571-273-6942**.

Further, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only.

For more information about the PAIR system, see

<http://pair-direct.uspto.gov>


Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at **866-217-9197** (Toll Free).

Alternatively, inquiries of a general nature or relating to the status of this application or proceeding can also be directed to the **Receptionist** whose telephone number is **571-272-6584**. Further, the supervisor's contact information is Donald Walsh, 571-272-6944.

Signed by Examiner Joseph Rodriguez

Jcr

October 14, 2005



DONALD P. WALSH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600